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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,990	05/04/2005	Andreas Wunderlich	040085.00004	2585
26710 7590 09/14/2007 QUARLES & BRADY LLP 411 E. WISCONSIN AVENUE SUITE 2040 MILWAUKEE, WI 53202-4497			EXAMINER MITCHELL, KATHERINE W	
			ART UNIT 3677	PAPER NUMBER
			MAIL DATE 09/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/533,990

Applicant(s)

WUNDERLICH, ANDREAS

Examiner

Katherine W. Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The amendment filed 7/12/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: teeth having equal but opposite sides alternately offset to opposite sides of a longitudinal centerline of the thread, and the direction of "V", which was never shown or described. The only centerline ever disclosed was:

[0007] Giving teeth a set is a measure commonly employed in the case of saw blades, and involves alternately bending the teeth of a saw blade to the right and left of a centerline. Such measures are presently unknown in the case of a thread. [background of invention – refers to sawblade, not screw or thread]

[0028] FIG. 3 depicts a partial view of the screw, diagonally sectioned along, for example, the line III-III in FIG. 1, and drawn on an enlarged scale. The crest of its thread has a sawtooth profile. The leading edge 6 of every tooth 7 lies on a line passing through the centerline of the sectioned partial view, i.e., through the screw's longitudinal axis 8. [Centerline is explicitly described as screw longitudinal axis]

Claim 1. A screw for use on hard materials, such as concrete or masonry, having a shaft (1), a head (3) in the vicinity of one end of the shaft (1), a tip (4), and a thread (2), wherein cutting teeth that are formed on a side of the thread that faces away from the head are alternately inclined to the left and right of a centerline over their full lengths. [original claim – must refer back to original specification, which must mean the centerline described as the screw longitudinal axis]

Applicant is required to cancel the new matter in the reply to this Office Action.

2. The disclosure is objected to because of the following informalities:

- On the top of page 4:

"When unwound and flattened out, the thread will thus appear to be a

row of laterally offset rectangles whose right-hand edge is aligned on the left-hand edge of the next rectangle.” does not make sense. Does applicant mean that the **right hand edge of an offset rectangle is aligned with the left hand edge of the next rectangle?** How is “next rectangle” defined?

- On page 5, “the leading edge 6 of every tooth 7 lies on a line passing through the centerline ... ie the screw’s longitudinal axis.... Is not shown, or, for that matter, possible. **Each** leading edge lies on a line, but **the** leading edge of **every** tooth cannot lie on a {single} line.
- At the top of page 6,
:“The leading edges 6 of the teeth, which are actually surfaces, blend into radial edges 11 on the teeth 7, where those edges 11 are configured in the form of either the leading edge of a tooth or the trailing edge of a tooth.”
- The leading edges of the teeth blend into the radial edges, but then the radial edges are described as configured in the form of the leading edge. This is circular logic. Appropriate correction is required.
- Page 6 has leading edges 6 of teeth (line 1), radial edges 11 on teeth 7 (lines 1-2) and leading edges 11 of teeth 7 (line 5 up from the bottom of the page, page 6). If the leading edges of the teeth are different, they must be called different names that distinguishes there differences (see

page 8 of applicant's remarks); if the leading edges of the teeth are the same thing, they must have the same number.

Drawings

3. The drawings filed 7/12/2007 are entered as a matter of right, but they introduce new matter (the centerline of the threads and the direction "V") into the application.

The new matter must be deleted from the drawings.

4. The drawings are objected to because they are hard to correlate between views. For example, Examiner cannot determine how Figs 3, 4, and 5 correspond. For example- how is the dashed line in Fig 4 related to the dashed lines in Fig 3? Fig 1 does not agree with Fig 3 or 5 - Fig 1 clearly shows a smooth continuous thread, not the sawtooth or alternately inclined teeth of all the claims and Fig 3 and 5. Since this is the main inventive feature, the drawing must in some way indicate what the thread teeth do- even if there needs to be an exploded section of Fig 1 shown. Also, examiner does not see how a view as described for Fig 4 would not show the laterally offset adjacent teeth as shown in Fig 3 and 5.

Applicant has amended the specification to state that Fig 5 is a top view of a portion of a single turn of its thread, shown unwound and flattened out. This is, as best understood by examiner, not correct. A top view has been oriented as per Fig 2, There is no way that Fig 5 can be a top view and show the faces 12 of the threads 2—the faces 12 are only lines in a top view. Fig 3, for example, is clearly a top or bottom view, and there is no manipulation of threads that will result in Fig 5.

How is Fig 3, with "8" as the shaft longitudinal centerline, a diagonal section?

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Examiner cannot point out every possible contradiction or uncertainty in every drawing. Applicant should provide drawings that clearly and consistently show the claimed invention.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the notches disposed between the cutting teeth that do not extend all the way down to the shaft of the screw must be shown or the feature(s) canceled from the claim(s). Examiner agrees that "10" is described as a notch, but since Fig 3 is a top or bottom view, "10" does not show to examiner a notch that does not extend to the shaft—examiner is not sure how the notch is between 2 teeth, and does not see any indication of where the notch ends. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Certain Claims are objected to because of the following informalities --

Claim 1 as preliminarily amended 5/4/2005 ended "...centerline over their full lengths". Now amended claim 1 ends "...centerline of the thread. ~~over their full lengths.~~" Obviously, changes have been made that are not reflected in the marked up copy. Further, it appears this unmarked change "centerline ***of the thread***" is new matter.

Claim 6 ended with 2 periods in the previous set of claims as preliminarily amended 5/4/2005; no indications of any changes are indicated in the currently presented marked up claims but now claim 6 has only a single period.

Claims 13-15 still show as changes the changes to multiple dependency made in the preliminary amendment of 5/4/2005/4/2005.

All changes must be shown. Changes that are not made with the present amendment must not be shown as changes. Applicant must review all claims word by word to ensure no other changes were made without showing the marked up changes. The next response must clearly identify in the remarks any changes made to the claims that were filed 1/24/2007 that were not shown in the marked up version, so that examiner can determine if they have all been considered. Any changes that were presented on 1/24/2007 that were not marked up will be subject to a revised office

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action, as examiner is assuming that all changes have been marked up as required other than the 2 identified above that she happened to notice.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 now recites that the teeth are alternately offset to opposite sides of a longitudinal centerline of the thread. As discussed under "Specification", there was no original disclose of a thread longitudinal centerline, and thus no disclosure of teeth alternately offset to opposite sides of such a centerline. This is, it appears, the crux of the invention. It was not shown in the original drawings, or described in the original specification or claims.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

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applicant regards as the invention. REPRESENTATIVE EXAMPLES are described below:

Regarding claim 1, the phrase "such as" , even in the preamble, renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 1 now has the teeth having sides that are alternately offset to opposite sides of a longitudinal centerline of the thread. As noted above, the centerline of the thread is new matter. Examiner does not understand what is claimed – what original drawing or original specification description describes this alternate offset?

Claim 6 – now has the thread formed with 2 sides having alternating protrusions and notches. Are the alternating protrusions and notches in addition to the sides of the inclined teeth? It appears to examiner that the teeth of claim 1 have sides that are or form the protrusions and notches. If this is the case, it is also a problem that it does not further limit the parent claim.

Claim 8 has a row of cutting teeth formed along a longitudinal centerline of the thread. First, examiner assumes the longitudinal centerline of claim 8 is the same as the centerline of claim 1, and thus there is a problem with antecedent basis. As examiner understands this claim, depending on claim 1, it does not further limit claim 1, as the teeth in claim 1 inherently must be formed along the same longitudinal centerline of the thread.

Examiner does not completely understand claim 10 – Do the cutting teeth, or the notches, not extend all the way down to the screw shaft? Further, as discussed under

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the drawings and claim 6, examiner is not sure what the notches are—how do they differ from the sides of offset teeth? If they are, as described in the spec, notches 10 between teeth, how are they between teeth?

Claim 11, the included angle lacks antecedent basis.

Claim 12, the transition zone lacks antecedent basis. Also, the sides of the thread are claimed, but only “sides of the longitudinal axis, and sides of cutting teeth have been described, so there is a lack of antecedent basis.

Claim 13, the width of their face (both width and face) lacks antecedent basis.

Claim 14, how would such a set of teeth which is not described vary over the length of the screw’s shaft? Vary in shape, or in size, or in color, or how? What is being claimed? How is “depth” defined – using what coordinates or axes?

Claim 11, to a screw not in combination with a substrate, requires knowledge of an undescribed an unclaimed drilled hole to determine the thread structure. How would someone looking at a screw know if it met this limitation, absent a dimension?

ALL claims should be reviewed for similar problems. Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

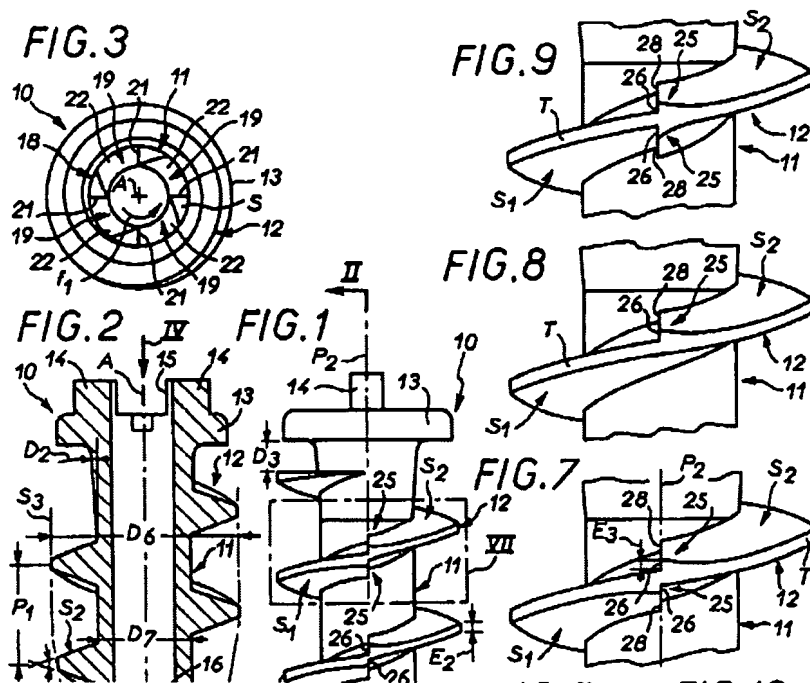
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11. As best understood, claims 1-9 and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Auger, EP 0501860.

Examiner is very unsure of what is being claimed, but as best understood, Auger teaches in the Figures and abstract a screw capable for use on hard materials, with a shaft, head at one end, tip, and a thread with cutting teeth having equal but opposite sides that are laterally offset to opposite sides of the thread's longitudinal centerline. (see new matter above). There are a series of cutting teeth formed along at least one half turn of the thread—the series is formed by considering multiple half turns to include multiple teeth. As best understood, noting that paragraph [0008] is the only disclosure of a sawtooth, examiner considers Auger Fig 1 to be a sawtooth profile, with teeth disposed to opposite sides of the longitudinal centerline (see new matter above). The thread has a flattened crest forming a narrow face (T) with edges 28 extending across it, and there are a plurality of narrow faces along at least one half turn – the plurality is along several turns, which are at least one half turn, and there are cutting edges. The transverse leading edges on at least one side are roughly radially disposed and extend all the way down to the shaft (Fig 10, and Fig 6, not copied, best shows this). The thread has 2 sides with alternating protrusions and notches (Figures, esp. 8,5,10) The teeth are along a longitudinal centerline of the thread and have leading edges as described, and the figures show cutting teeth edges disposed along radii all the way down to the screw shaft. (Figures). The included angle between sides S1 and S2 of the thread are in a range of 20-30 degrees at the portion due to penetrate the drilled hole wall. The included angle between sides S1 and S2 of the thread are in a

range of 45 to 60 degrees over the transition zone immediately adjoining the shaft. Fig 7 and 8 show the teeth (on upper vs lower sides) offset from one another by the width of their face. The set of teeth vary over the shaft length- some are on one side, some are on the other, some have “double” teeth (fig 9 and 7), which is varied.

EP 0 501 850 A1



12. As best understood, Claims 10 are rejected under 35 U.S.C. 103(a) as obvious over Auger in view of Gerhard USP 6086302.

Re claim 10: As noted, examiner is not sure how a notch is formed between the teeth, and where it is shown as between the teeth, but notes that Fig 10 in Auger shows notches 26. However, they extend all the way down to the screw shaft. Gerhard shows a self tapping concrete screw, with notches that do not extend all the way to the shaft between cutting teeth. Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Auger and Gerhard before him at the time the invention

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was made, to modify Auger as taught by Gerhard to include the teeth with notches that do not extend to the shaft, in order to obtain a screw thread with sufficient strength and rigidity at the base of the threads at the shaft, and teeth that are well connected and supported and less likely to snap off when in use. One would have been motivated to make such a combination because a strong insertable screw would have been obtained.

13. As best understood, Claims 11-12 are rejected under 35 U.S.C. 102(b) as anticipated by Auger or, in the alternative, under 35 U.S.C. 103(a) as obvious over Auger in view of Leitold DE 4419988.

Re claims 11-12: As discussed above, examiner believes claims 11-12 are fully anticipated by Auger, especially in view of the "around" wording of the ranges. However, if it is held that Auger does not fully anticipate the ranges, Leitold teaches a similar threaded screw with projections on the thread forming teeth. Further, Leitold teaches that included angle between sides S1 and S2 of the thread are in a range of around 20-30 degrees at the portion due to penetrate the drilled hole wall in the Figures and translated abstract, and teaches that the included angle between sides S1 and S2 of the thread are in a range of around 45 to 60 degrees over the transition zone immediately adjoining the shaft, also in the abstract and Figures. Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Auger and Leitold before him at the time the invention was made, to modify Auger as taught by Leitold to include the angle ranges of Leitold, in order to obtain a screw thread with sufficient strength and rigidity at the base of the threads at the shaft, while providing a

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cutting/insertion edge that can be inserted into a bore without difficulty. One would have been motivated to make such a combination because a strong insertable screw would have been obtained.

Response to Arguments

14. Applicant has responded to examiner's specification, but has not corrected the specification. While it may be obvious even from that the quoted passage, what applicant intended, it must be corrected in the specification.

15. Note that several of the responses appear to be supported by new matter, per above.

16. Applicant believes Auger does not have teeth that form "a series of cutting teeth within one half turn of the screw thread". This is not claimed – claim 1 clearly claims "at least one half turn of the thread". The entire thread is at least one half turn.

The rejection over Munz has been withdrawn.

17. Because of the numerous 112 rejections, drawing objections, new matter issues, and specification and claim objections, examiner considers a telephone interview to be inappropriate and nonproductive at this time.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine W. Mitchell whose telephone number is 571-272-7069. The examiner can normally be reached on Mon - Thurs 10 AM - 8 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Katherine W Mitchell
Primary Examiner
Art Unit 3677

9/11/2007

